A Rare Extramedullary Presentation of Multiple Myeloma: Paraspinal Muscle Involvement Revealed by FDG-PET/CT
Multipl Miyelomanın Nadir bir Ekstramedüller Sunumu: FDG PET/BT ile gösterilen Paraspinal Kas Tutulumu

Paraspinal muscle involvement of MM on FDG PET/CT

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A 51-year-old male with recurrent multiple myeloma was referred for 18F-FDG PET/CT to evaluate response to chemotherapy. 18F-FDG PET/CT showed diffuse markedly increased uptake in the right paraspinal muscles (Figure 1). Recurrence of the kappa light chain myeloma was confirmed with diffuse infiltration of clonal kappa positive plasma cells in the bone marrow. Ultrasound-guided biopsy of the paraspinal muscles and cytologic analysis of closed-needle pleural biopsy revealed kappa monotypic plasma cell infiltration (Figure 2). Although radiotherapy targeting the paraspinal area was initiated he was lost due to deep vein thrombosis and pulmonary embolism before radiotherapy could be completed.
Plasmacytomas mostly occur within or paraosseos to the bone, but can also be found in soft tissues [1]. However, isolated intramuscular manifestation of multiple myeloma (MM) is rare [2, 3]. If detected, the most common location of presentation is paraspinal and thigh muscles, followed by iliopsoas and calf muscles. [3]. Studies have shown that FDG PET/CT can detect a larger number of EMP sites compared to MRI [3-5] and also has higher sensitivity and specificity for detecting EMP than intramedullary lesions in MM [6-8]. In this case, a rare presentation of extramedullary multiple myeloma is successfully demonstrated by FDG PET/CT.

References
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Figure 1. (A) MIP and (B) coronal PET (C) coronal CT (D) coronal fused (E) sagittal PET (F) sagittal CT (G) sagittal fused FDG-PET/CT images demonstrate extensive and diffuse FDG uptake in paraspinal muscles.
Figure 2. Microscopic examination revealing round monomorphic cells with vesicular and eccentric nucleus and immature plasma cells (A) (hematoxylin and eosin [H&E], 200). High power view shows plasma cells with basophilic cytoplasm, eccentric nuclei, and typical peripheral condensation of the chromatin (B) (H&E 400). Immunohistochemical staining shows that the tumor cells were negative for lambda (C) (magnification, 200) and positive for kappa (D) (magnification, 400).